

## **Building Bridges with Structured Linked Data at IUPUI University Library<sup>1</sup>**

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### **Introduction**

During recent years, library institutions have become increasingly interested in participating in open knowledge projects. The most commonly known of these projects is Wikipedia, the online encyclopedia. Some ways in which libraries have engaged with Wikipedia include hosting local edit-a-thons and participating in the #1Lib1Ref campaign, where librarians are encouraged to contribute one citation to an article in need.

Libraries have also demonstrated an interest in contributing their data to Wikidata, the newest project of the Wikimedia Foundation. With over 50 million items, the free knowledge base aims to be the source of structured linked data for all Wikimedia projects. The Wikidata community has developed a number of tools and web-based applications to either facilitate the contribution of content or to display the data in meaningful ways. An example of this is Scholia<sup>2</sup>, an open source application that provides complete scholarly profiles by displaying information stored in Wikidata in an appealing and effective manner. The application also pulls in brief descriptive information relevant to the subject from Wikipedia, when available. Scholia provides a comprehensive sketch of the author's scholarship and can also be used to search for scholarly literature.

### **The School of Philanthropy Pilot Project**

At IUPUI University Library, we were intrigued by Scholia and were interested in exploring its potential as a scholarly profile generator. We initiated a pilot project and selected the IU Lilly Family School of Philanthropy as the test subject. The School of Philanthropy, located on the IUPUI campus, is the leading school in the subject in the United States. In addition, the scholarship produced by its faculty is widely used. For these reasons, we wanted to provide a presence in Wikidata not just for the faculty, but also for their coauthors and publications. We expected that building the data set in Wikidata and displaying it in Scholia would help our institution better understand and describe the value of this school to global research on philanthropic giving and nonprofit management.

We initially selected a group of 18 full-time faculty members affiliated with the School of Philanthropy for this project, and more recently included a newly hired faculty for a total of

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<sup>2</sup> Scholia: <https://tools.wmflabs.org/scholia/>

19. As part of the process, we identified the properties<sup>3</sup> we needed to include in Wikidata to later generate the profiles using Scholia. We searched Scopus and Google Scholar for publications by the authors and gathered other necessary information to manually create Wikidata items. Later in the process, we also used the Source MetaData<sup>4</sup> and QuickStatements<sup>5</sup> tools to facilitate the creation of Wikidata items for journal articles. Finally, with Wikidata items created for all faculty, their co-authors, and some of their journal articles, we used Scholia to generate their scholarly profiles.

In our work to build a Wikidata collection for the School of Philanthropy, we found that the platform's ability to record gender provided us with new insights regarding the scholarly communication patterns in the school. The co-author graph color-coded by gender allowed us to understand the collaboration happening among female and male faculty members, and revealed that co-authors seem to be self-segregating by gender (See Figure 1).

### **Bridging the Gender Gap**

Following our initial pilot, we began to explore ways to include others from our library in the work of contributing to Wikidata. Prompted by an Open Access Week 2017 event, we decided to focus on IUPUI women faculty. In that week, our library hosted a conference for which the keynote speaker, Cassidy Sugimoto, addressed gender disparities in scholarly communication.<sup>6</sup> Women are more likely to be left off of an author list for an article, more likely to be devalued in the authorship order, and less likely to be cited.<sup>7</sup> Sugimoto's research also found that articles authored or coauthored by women were less likely to be cited even when published in the most prestigious journals.<sup>8</sup> Inspired by Sugimoto's work, we were reminded that scholarly works included in Wikidata suffer from the same gender disparities.<sup>9</sup> Rather than watching while Wikidata replicated the widely acknowledged gender disparities in Wikipedia,<sup>10</sup> we decided to prioritize the inclusion of women authors from our campus. To this end, we hosted a Wikidata edit-a-thon to strengthen the presence of IUPUI women faculty in the knowledge base.

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<sup>3</sup> A Property in Wikidata is used to record metadata values. It is often compared to metadata fields.

<sup>4</sup> Source MetaData tool: <https://tools.wmflabs.org/sourcecmd/>

<sup>5</sup> QuickStatements tool: [https://tools.wmflabs.org/wikidata-todo/quick\\_statements.php](https://tools.wmflabs.org/wikidata-todo/quick_statements.php)

<sup>6</sup> 2017 Academic Libraries of Indiana Scholarly Communication Librarianship Conference. October, 27, 2017. IUPUI University Library, Indianapolis, Indiana.

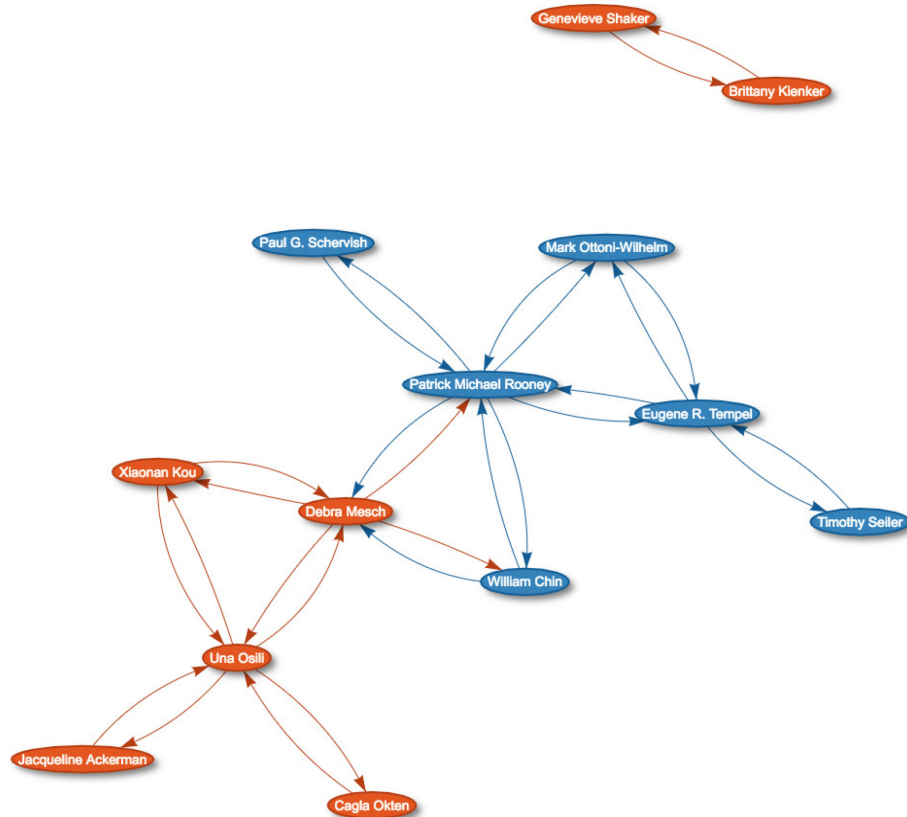
<https://academiclibrariesofindiana.org/ASCLC>

<sup>7</sup> Larivière, V., Ni, C., Gingras, Y., Cronin, B., & Sugimoto, C. R. (2013). Bibliometrics: Global gender disparities in science. *Nature News*, 504(7479), 211. <https://doi.org/10.1038/504211a>

<sup>8</sup> Lariviere, V., & Sugimoto, C. (2017, March 27). The end of gender disparities in science? If only it were true... *CWTS Blog*. Retrieved November 27, 2017, from <https://www.cwts.nl:443/blog?article=n-q2z294>

<sup>9</sup> Le Hir, E. (2017). A tool to estimate gender gap on Wikidata and Wikipedia. [Blog] Le Hir's personal blog. Available at: <https://www.lehir.net/a-tool-to-estimate-gender-gap-on-wikidata-and-wikipedia>

<sup>10</sup> Gender bias on Wikipedia. (2017, November 18). In Wikipedia. Retrieved from [https://en.wikipedia.org/w/index.php?title=Gender\\_bias\\_on\\_Wikipedia&oldid=810873153](https://en.wikipedia.org/w/index.php?title=Gender_bias_on_Wikipedia&oldid=810873153)



*Figure 1: IU Lilly Family School of Philanthropy co-author graph generated by Scholia.*

### **Wikidata Event**

For this event we invited all staff members from our library to participate. All confirmed participants were provided with instructions and a link to a spreadsheet that contained a list of preselected women faculty. We asked participants to select one name and record specific data (mainly identifiers) pertaining to the chosen individual. Although our edit-a-thon was a small event, we were able to create 19 new items in Wikidata, and edited 24 existing items with a total edit count of 744. Bringing awareness of the existent gender disparities via small events like this one could help to reduce the gender divide.

### **What's Next for Wikidata in the Library**

At IUPUI University Library, we are committed to continue contributing to Wikidata. We believe academic libraries should consider redirecting resources towards curating, creating and sharing data about scholars affiliated with their institutions in open platforms such as Wikidata. Academic libraries manage large amounts of data associated with many digital scholarship and other library services. When not constrained by intellectual property or privacy concerns, these data could be shared in the knowledge base. Our pilot project and edit-a-thon were the first steps toward more efficient and systematic library-based contributions to Wikidata.